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AUTHOR Hodes, Carol L.

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ABSTRACT

Developers of distance education courses need to determine the best and most efficient delivery systems. Traditional print-based correspondence courses are thought to prevail in the technological age because of inertia of administrators and instructions, but it is important to know the preferences of the adult learners who are the usual nontraditional consumers of such courses. The 26 subjects in this study were students in a for-credit correspondence course that is an upper-level elective for bachelor's degree candidates. They responded to a 7-item Likert scale asking about media preferences for distance education and attitudes toward correspondence courses. There was strong agreement that the print-based course is more convenient than a traditional classroom course or computer-based courses. Preference for print course formats was also obvious compared with computer-network, floppy disk, and videotape formats. Because the subjects were all technical professionals, fear or anxiety about computers was not thought to be a confounding influence. Learner preference and technology gaps will keep the print-medium course in use for some time to come. (Contains 14 references.) (SLD)

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Delivery System Preferences of Nontraditional Learners

Carol L. Hodes, Ph. D.

Send Communications to:
3222 MCHS, Bloomsburg University
Bloomsburg, PA

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Delivery System Preferences of Nontraditional Learners

Abstract

Data support the preference of print-based distance education courses among a group of nontraditional learners. The persistence of print-based courses has been considered an administrative decision rather than a learner preference. As the technology gap narrows, technology-delivered instruction will become more prominent. At present, print courses are viable in regions where the infrastructure for technology-delivered instruction is not developed and education is needed.

Key words:
distance learning
non-traditional learners
course format
adult education

Delivery System Preferences of Nontraditional Learners

Introduction

With information doubling approximately every eight years, most professionals realize a need for ongoing education. To best serve these learners, who are largely career professionals, developers of distance education courses need to research the best and most efficient delivery systems.

Are distance education course formats driven by learner preferences or by administrative factors? Traditional print-based correspondence courses are thought to prevail in the technological age due to inertia of the administrators and instructors (Duning, 1987; Pittman, 1987; US Congress, Office of Technology Assessment, 1989). In fact, print courses may exist as they have for a century because they are preferred. Also, technology is not evenly distributed. The range of technology available for distance education is not uniform, with gaps between the rich and poor nations (Hayman, 1993). Distance education will have increasing importance if education is to reach and link remote areas. For example, the goal of a current effort is to provide education to the islands in the SOuth PAcific. To further understand the need for print correspondence courses, the present study investigates the course format preferences of nontraditional learners.

Adults as Learners

Most adult learners are career professionals. Although adults enroll in courses for many reasons, career interests tend to dominate their decision to enroll (Aslanian, 1989; Verduin et al., 1986). Many barriers exist for nontraditional learners, which often makes their enrollment decisions complex (Cross, 1981). Many nontraditional learners are also anxious about looking foolish, which is minimized with distance learning (Rogers, 1989). Indeed, having alternative course formats is important to nontraditional learners, both in terms of helping them overcome situational, geographic, or personal barriers.

Course Formats

There currently are a wide variety of distance education options, many of which are hybrids. For example, many instructor-based video or televised courses have supplementary print materials (U.S. Congress, Office of Technology Assessment, 1989), and many former print-based courses have integrated interactive technologies (Thompson, 1990). For the purpose of the present study, there are four main course formats (Zigerell, 1984): print, or traditional correspondence courses, video-based telecourses, including broadcast instruction, computer based, where lessons can be received on a floppy disk, or computer networked to the instructor, also called telelearning.

The 100-year-old correspondence course, the decline of which has been predicted for decades (Pittman, 1987), may offer the maximum convenience and flexibility in distance education. Learners need only paper and postage to mail in lessons from any location world wide. Learners determine their own pace and schedule, and completion deadlines usually are generous. The disadvantages of print are lack of interaction with the instructor (Thompson, 1990), and the time lapse between submissions and responses. Computer-based courses may be similarly administered, but the learner receives information or lessons on a floppy disk. Print materials may accompany the course, and there may also be generous completion timelines. For any course requiring a computer, the hardware requirement is obvious--the learners need to have a compatible PC wherever they intend to complete course work. Telecourses, a prepared videocassette or broadcast, offers flexibility if off-air taping is available. Of course this option requires a play-back unit to complete course work. Networking, or telelearning, offers direct communication between learner and instructor, which may require mutual time between the two, as well as access to the hardware. The advantage of networking is the immediate feedback and ability to have an interactive session with the instructor.

Method

The present study surveyed technical professionals for their course format preference. The typical subject was employed full time or active duty military, and completing a bachelor's degree or certification program. Many subjects had taken other distance courses. The sample included all geographic regions of the United States. The survey included the four principal modes of distance learning.

Subjects consisted of a group of students who had enrolled during 1990 or 1991 in a credit-bearing correspondence course which is used as an upper-level technical elective for B.S. degree candidates. The course completion rate among the subjects was 72%, therefore the subjects in the present study are considered successful distance learners. Eighty percent of the subjects applied their course credits toward a degree at an institution other than the one offering this course (Hodes, 1993).

Sixtytwo subjects were contacted by mail and asked to complete the survey. Fortyfive percent of the surveys were returned to the researcher. Surveys with incomplete information were eliminated. For the data analysis, the group consisted of 26 subjects.

The survey consisted of seven items which used a five-point Likert scale where a value of one indicated "strongly agree" and five indicated "strongly disagree." The first three Likert-scale items tabulated a response to an inquiry about course format preference by asking "A print or book-based course is more convenient than...." The "Convenience" items were used as an index of the subjects' need for flexibility, pacing and access to the course materials. The three formats given for comparison in the first three items were "traditional classroom courses," "computer-based courses," and "video-tape based courses."

The other group of items asked the subjects how they would prefer to receive lessons if they were to enroll in another distance education course. A strong preference for a particular format would mean that the subjects consider this format highly acceptable and that they would consider such a course themselves. The subjects indicated their preference for receiving lessons over a computer network, on floppy disks, on videotapes, or in a book or study guide (which was their present course format).

As a measure of internal consistency, coefficient alpha was calculated (Cronbach, 1990). The instrument yielded a coefficient alpha of .9432.

Results

Data were analyzed using SYSTAT software. Chi square tests were done on the first three items to tabulated the frequencies an indication of the subjects' preference for a more convenient course format. T-test contrasts were done on the delivery system items to determine significant preferences.

There was a very strong agreement (Table 1) that the print based course is more convenient than a traditional classroom course (Chi square (4)= 21.31, $p<.01$). A print based course was also seen as more convenient than computer-based courses (Chi square (4) 11.31, $p<.05$).

Table 1

Most Convenient Course Format

A print or book-based course is more convenient than a

	Strongly Agree		Neutral		Strongly Disagree	X^2	p
Traditional classroom course	14	4	5	3	0	21.31	.000**
Computer-based course	11	7	4	2	2	11.31	.03*
Videotape-based course	6	9	5	4	2	5.15	.17

Note. Lower values indicate stronger agreement. *p<.05, **p<.01

As for the lesson delivery system, the mean for receiving lessons over computer network was significantly higher (stronger disagreement) than all the other options (Table 2): disk (T(25) = 3.934, p<.01), videotapes (T(25) = 5.947,p<.01), and book or study guide (T(25) = 8.198, p<.01). Receiving lessons in a book or study guide met significantly stronger agreement than either floppy disk (T(25) = 4.29, p<.01) or videotapes (T(25) = 4.228,p <.01).

Table 2

Significant Contrasts for Lesson Format Preference

Subjects would like to receive lessons

	M	vs.	M	T(25)	p
Over a computer network	4.19	Floppy Disk	3.19	3.93	.001**
		On Videotape	2.92	5.95	.000**
		In a book	1.58	8.19	.000**
In a Book or Study Guide	1.58	Floppy Disk	3.19	4.29	.000**
		On Videotape	2.92	4.23	.000**

Note. Lower values indicate stronger agreement. **p<.01

Discussion

There is a strong agreement among these learners that a print-based distance course is more convenient than either traditional classroom courses or computer-based courses. The preference for print also was obvious when the delivery system preferences were contrasted to computer network, floppy disk and videotapes. Since the subjects were all technical professionals, fear of computer delivery systems or "technophobia" was not thought to be a confounding factor.

The persistence of print in distance education courses has been attributed to many things, such as start-up cost and lack of initiative among faculty and administrators alike (Duning, 1987; Pittman, 1987; U.S. Congress, Office of Technology Assessment, 1989). The fact that print-based

correspondence courses endure also can be attributed to a clear preference among many nontraditional learners.

Most subjects had experience with other distance education courses and took this course to fulfill degree requirements; they feel that print-based courses are a convenient and preferred format with video as their next closest choice. Major factors in course selection are flexibility and the potential for self pacing (Verduin, 1986). In fact, a print-based course may be the most flexible and convenient type of course for many nontraditional learners. Subjects in the present study complete courses while shipboard or stationed abroad, and others report job transfers or changes of residence. Print-based courses usually can be completed without specific equipment, such as video playback units or computer terminals. The strongest contrast of the lesson formats was between print-based and computer network (Table 2). The study time of nontraditional learners is usually an "after hours" undertaking (Reichmann-Hruska, 1989), which means that time devoted to the course itself may occur at home, while commuting to and from work, or on a business trip where hardware often is unavailable. Having a course that is entirely portable is a important factor in flexibility and convenience for many distance learners. Conversely, the main disadvantage cited in correspondence study is the lack of interaction with the instructor (Thompson, 1990).

Will technology-delivered instruction become more prominent? In developing regions, electronic communications themselves are undergoing radical changes in accessibility and organization. However, due to the lack of resources in many countries, technology-delivered instruction cannot compete with print (Hayman, 1993). The lack of hardware and portability are barriers. To date, some hotels and conference centers in Western countries are equipped for business travelers who need to use modems and other electronic equipment, but most location do not. In time, networking and telecourses will be increasingly available world-wide. In developing countries with substantial educational needs, print-based courses are a widely-accepted, viable alternative while the infrastructure for sophisticated delivery systems develops.

Conclusions

Technology delivered instruction will become more prevalent in distance education as it better meets the needs of the nontraditional learners and as the technology is increasingly available. Primarily those needs are flexibility, self pacing and portability, allowing access to education regardless of schedule or location. Systems with no set time have been shown to favor course completion with nontraditional learners (Rogers, 1989). As it now stands, video or computer-based courses and their equipment requirements are barriers.

To answer the question of which factors drive course formats and delivery systems: For the foreseeable future, print-based distance courses will continue their popularity, although not entirely due to administrative reasons, but due to various learner preferences and technology gaps. More hybrid formats and techniques for increasing student-instructor interactions may offer improvements in print-based courses; however in light of these data, distance education courses should include a print component which could include materials such as a student workbook, readings, bibliography, and glossary.

The preference for print is followed closely by broadcats or video-based instruction. Thus the most feasable new course format may be a video-print hybrid. A computer link can be added once the course is established.

The format preference among instructors, administrators and nontraditional learners may be the same, but for different reasons. Instructors and administrators cite cost of development and implementation, while the learners cite preferences for formats that best meet their needs. Thus, print format courses still offer many advantages to nontraditional learners, and need to be considered in new distance education endeavors. Therefore, regardless of primary delivery system, allow time for the development of the print component. Do not assume that all courses must be computerized or that no course will be print. Areas with a technology gap can develop

print based coursed and add technology-based delivery later. Consider a variety of delivery systems and do feasibility before investing in technology. Distance learning has shown to be just as effective as classroom instruction (US Congress, Office of Technology Assessment, 1989). The most important considerations, and the reason distance education exists, is to accommodate the learner and to bring education to regions where education in unavailable. Courses must be learner-centered which can be accomplished with any medium or format. In the future, the delivery system may not be important. The most important factors will be the methods and techniques used to facilitate learning, especially those that eliminate barriers for nontraditional learners and learners in developing countries.

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